SUNSHINE.

The following table gives the total hours of sunshine and percentage of the possible:

Stations.	Hours.	Percentage of possible.	Stations.	Hours.	Percentage of possible.
Eureka	46	15	Sacramento	170	56
Fresno	238	78	San Diego	244	78
Los Angeles	246	79	San Francisco	171	56
Mount Tamalpais	192	63	San Jose	212	69
Red Bluff	152	51	San Luis Obispo	224	72

NOTES ON THE RIVERS OF THE SACRAMENTO AND LOWER SAN JOAQUIN WATERSHEDS DURING THE MONTH OF NOVEMBER, 1912.

By N. R. TAYLOR, Local Forecaster.

Sacramento watershed.—The rivers of this watershed averaged from 1 foot to over 3 feet higher than during the preceding month. In the upper reaches of the Sacramento the river was slightly above the November normal stage. At all other points in this stream there was little departure from the usual November stages.

Rains were general during the first decade of the month in the Sacramento River Basin and were relatively heavy from the headwaters of this stream southward to Red Bluff. As a result of the rains there was a substantial rise at all places on the Sacramento River, the greatest being 8.7 feet at Colusa during the 24 hours ending on the 8th, when the river at that point culminated in a stage of 14.5 feet. The crest of this rise reached Knights Landing and Sacramento City on the 9th. After the 10th of the month there was a steady fall in the Sacramento, and by the close of the month the river was only slightly above the low stages that obtained prior to the rains.

Rains were also general in the Feather-Yuba and American watersheds, resulting in sharp rises in those streams, but, like the Sacramento, they receded steadily after the 10th of the month, and at its close the effects of the rainfall were barely apparent.

Some snow fell in the high ranges of the Sierra Nevada during the month, but it resulted in no appreciable rise.

Navigation during the month was uninterrupted.

Lower San Joaquin watershed.—Some rain fell in this watershed during the month, but not in sufficient amounts to materially affect the average stages, which were slightly above those of October.

NOTES ON THE STREAMS OF THE UPPER SAN JOAQUIN WATERSHED.

By W. E. BONNETT, Local Forecaster.

November stages at all stations in this river district continued very low during November and not materially different from the low stages of October. The Merced was slightly higher and the San Joaquin slightly lower than in October, but the changes were not considerable. One general rain in moderate amount fell in these watersheds on the 10th. It was followed by a small rise in the Merced, but no change occurred in other streams of the district.

RELATION OF RAINFALL TO YIELD OF MILK.

By A. G. MCADIE.

In Bulletin No. 233, of the College of Agriculture, University of California, there is given the results of three years' work by the Ferndale (Humboldt County, Cal.) Cow-Testing Association. The Bulletin is written by Prof. Leroy Anderson, in charge of Dairy Industry, and contains much that is interesting regarding the regular and economic testing of cows for the production of milk and butter fat. In California there are three cow-testing associations in active operation—at Ferndale, Modesto, and Tulare. The method of testing consists in sampling and weighing the milk of each cow at the evening and morning milking and testing the combined sample for butter fat. The amount of milk and fat produced in the 24 hours multiplied by the number of days in the month is taken as the cow's monthly production. No record, however, is kept of the cow's feed.

The Eel River lands, occupied by the Ferndale association, represent the most highly specialized dairy interests of the State. The rains are heavy in the winter season, and it is the custom to have most of the cows dry at that time. It is found that the annual rainfall has important bearing in interpreting the records. The precipitation of 1909 was 5.75 inches above normal; while that of 1910 and 1911 was 16.24 inches and 16.04 inches, respectively, below normal. In spite of the great decrease in rainfall during the last two years and its resultant effect upon grazing and feed conditions in general, the average production of milk and fat increased.

It would be most interesting to compare the relative yields of milk and butter fat in different sections of the State in connection with rainfall departures from normal conditions.